

## CLAIMS

What is claimed is:

1. An electrical power connection block housing comprising:

a first housing piece forming at least a portion of a first exterior side of the block housing, an interior side of the first housing piece having a first slot shaped bus bar mounting area; and

a second housing piece connected to the first housing piece, the second housing piece having a portion with a first side located directly opposite the interior side of the first housing piece and a second slot shaped bus bar mounting area on the first side of the second housing piece,

wherein the first and second housing pieces form a first bus bar receiving area with the first and second bus bar mounting areas located generally opposite each other on opposite sides of the receiving area for capturing opposite side edges of a bus bar therebetween.

2. An electrical power connection block housing as in claim 1 wherein the first slot shaped bus bar mounting area comprises a first projection having a general C shape and extending inward from the interior side.

3. An electrical power connection block housing as in claim 2 wherein the first slot shaped bus bar mounting area comprises a second projection having a general reversed C shape and extending inward from the interior side.

4. An electrical power connection block housing as in claim 3 wherein the first and second projections are vertically offset from each other.

5. An electrical power connection block housing as in claim 1 wherein an exterior side of the first housing piece comprises fastener mounting areas.

6. An electrical power connection block housing as in claim 1 wherein the first and second housing pieces form conductor passage apertures through front and rear end walls of the connection block housing.

7. An electrical power connection block housing as in claim 1 wherein the first and second housing pieces each comprise interlock connection sections with mating projections and recesses which are intermeshed with each other.

8. An electrical power connection block housing as in claim 1 further comprising a third housing piece connected to the second housing piece, wherein the second housing piece has a second side opposite its first side, the second side of the second housing piece having a third slot shaped bus bar mounting area, and wherein the third housing piece has a first side located opposite the second side of the second housing piece, the first side of the third housing piece having a fourth slot shaped bus bar mounting area.

9. An electrical power connection block housing as in claim 8 wherein the third housing piece forms at least a portion of a second exterior side of the block housing, the second exterior side being located on an opposite side of the block housing from the first exterior side .

10. An electrical power connection block housing as in claim 8 further comprising a fourth housing piece connected to the third housing piece, wherein the third housing piece has a second side opposite its first side, the second side of the third housing piece having a fifth slot shaped bus bar mounting area, and wherein the fourth housing piece has a first side located opposite the second side of the third housing piece, the first side of the fourth housing piece having a sixth slot shaped bus bar mounting area.

11. An electrical power connection block housing as in claim 10 wherein exterior sides of the first and fourth housing pieces comprise fastener mounting areas.

12. An electrical power connection block housing as in claim 8 wherein exterior sides of the first and third housing pieces comprise fastener mounting areas.

13. An electrical power connection block housing as in claim 8 further comprising a cover connected to at least one of the housing pieces.

14. An electrical power connection block assembly comprising:

an electrical power connection block housing as in claim 1; and

an electrical bus bar sandwiched between the first and second bus bar mounting areas, the mounting areas stationarily holding the bus bar in the first bus bar receiving area.

15. An electrical power connection block assembly as in claim 14 wherein the electrical bus bar comprises a first

section with at least one fastening post extending in a first direction and a second section with at least one fastening post extending in an opposite second direction.

16. An electrical power connection block assembly as in claim 15 wherein the first section is at least partially vertically offset from the second section.

17. An electrical power connection block assembly as in claim 16 wherein the first and second sections have a connecting section therebetween, and wherein the first, second and connecting sections form a general Z shape.

18. An electrical power connection block assembly as in claim 14 wherein the first and second bus bar mounting areas are spaced from top and bottom sides of the housing pieces to form through air clearances between the bus bar located in the first bus bar receiving area and the top and bottom sides of the housing pieces.

19. An electrical power connection block assembly as in Claim 14 wherein the electrical bus bar comprises a first section with at least one fastener mounting hole and a second section with at least one fastener mounting hole.

20. An electrical power connection block assembly as in Claim 19 wherein the first and second sections are vertically offset from each other.

21. An electrical power connection block assembly as in Claim 19 wherein the at least one fastener mounting hole in the first section comprises an enlarged counter-bore section on a first side and, wherein the at least one fastener mounting hole in the second section comprises an enlarged counter-bore section on a second side

22. An electrical power connection block housing comprising:

a first housing piece forming at least a portion of a first side of the block housing, the first housing piece having a first interlock connection section;

a second housing piece having a first side with a second interlock connection section directly interconnected with the first interlock connection section and a second side with a third interlock connection section; and

a third housing piece having a first side with a fourth interlock connection section directly interconnected with the third interlock connection section,

wherein the housing pieces form bus bar receiving areas therebetween, and wherein the first and third interlock connection sections are substantially a same size and shape.

23. An electrical power connection block housing as in claim 22 wherein the first housing piece has an interior facing side with a first bus bar side edge mounting section.

24. An electrical power connection block housing as in claim 23 wherein the second housing piece has a second bus bar side edge mounting section and a third bus bar side edge mounting section on respective opposite sides of the second housing piece.

25. An electrical power connection block housing as in claim 24 wherein the third housing piece has an interior side with a fourth bus bar side edge mounting section.

26. An electrical power connection block housing as in claim 24 further comprising a fourth housing piece connected to the third housing piece, wherein the fourth housing piece has an interior facing side with a bus bar side edge mounting section, and wherein the second housing piece and the third housing piece are substantially identical to each other.

27. An electrical power connection block housing as in claim 22 wherein the first interlock connection section comprises a side edge of a bottom section of the first housing piece having a bottom slot, a top slot located over the bottom slot and partially horizontally offset from the bottom slot, and a cover section over the top slot.

28. An electrical power connection block housing as in claim 27 wherein the bottom slot extends into the side edge a further distance than the top slot.

29. An electrical power connection block housing as in claim 28 wherein the top and bottom slots are connected to each other.

30. An electrical power connection block housing as in claim 29 wherein the first interlock connection section comprises two pairs of the top slots, bottom slots and cover sections.

31. A method of assembling an electrical power connection block assembly comprising steps of:

locating electrical bus bars between pairs of housing pieces of the connection block, a middle one of the housing pieces having two of the bus bars located against opposite respective sides of the middle housing piece; and

intermeshing mating projections and recesses of the housing pieces with adjacent housing pieces to interlock the housing pieces with each other.

32. A method as in claim 31 wherein the step of locating the electrical bus bars between the pairs of housing pieces comprises sliding side edges of the bus bars into opposing receiving slots of mounting sections of the housing pieces.

32. A method as in claim 31 wherein the step of locating the electrical bus bars between the pairs of housing pieces comprises sliding side edges of the bus bars into opposing receiving slots of mounting sections of the housing pieces.